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**An apparatus and a method for optical spectroscopy and for optical sensory technology and use of the apparatus**

**Abstract**

The present invention relates to an apparatus and a method for optical spectroscopy and for optical sensory technology and to the use of the apparatus.

An apparatus having high spectral resolution with simultaneously comparatively low demands on the quality of the optical components is provided in that the apparatus for optical spectroscopy comprises means for the generation of an interference pattern, means for the coupling of the incoming light field to be examined such that only one or several individual spatial modes of the field are permitted, and a detector which can record the intensity of the generated interference pattern at a plurality of spatially different positions, with the wavefronts and/or the propagation direction of at least one of the light fields involved in the interference pattern being changed by spectrally dispersive or diffractive optical elements in dependence on the wavelength.

The present invention furthermore relates to a method of determining the optical spectrum and/or of other measurands encoded or transmitted by an optical spectrum

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by analysis of the interference pattern measured using an apparatus in accordance with the invention or using an apparatus in accordance with the invention.

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